National Status and Trends Program

Since 1984, the National Oceanic and Atmospheric Administration (NOAA) has monitored, through its National Status and Trends (NS&T) Program, the concentrations of organic compounds and trace metals in bottom-feeding fish, shellfish, and sediments at almost 300 coastal and estuarine locations throughout the United States. The objective of the program, which is administered by the Coastal Monitoring and Bioeffects Assessment Division of the Office of Ocean Resources Conservation and Assessment, is to determine the status and long- term trends of contamination in these important areas. Samples collected annually through the program are analyzed to determine levels of synthetic chlorinated compounds (e.g., DDTs), polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and trace metals (e.g., mercury and lead). NOAA's NS&T Program is the first to use a uniform set of techniques to measure coastal and estuarine environmental quality over relatively large space and time scales. A "specimen bank" of samples taken each year at about 10 percent of the sites is maintained at the National Institute of Standards and Technology for future, retrospective analyses. A related program of directed research is examining the relationships between contaminant exposures and indicators of biological responses in fish and shellfish (i.e., bioeffects) in areas that are shown by the NS&T monitoring results to have high levels of toxic chemicals.

This report, based on data from analyses of mollusks, describes trends in contamination from 1986 through 1990. It follows, and in some sections reiterates, a 1990 report (O'Connor, 1990) that described the spatial extent and severity of sediment contamination.

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Recent Trends in Coastal Environmental Quality: Results from the First Five Years of the NOAA Mussel Watch Project

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INTRODUCTION

Following increasing public and scientific concern about the quality of the marine environment and the absence of any long-term national monitoring program in the United States in the early 1980's, the National Oceanic and Atmospheric Administration (NOAA) created the National Status and Trends (NS&T) Program in 19 84. The program monitors trends of chemical contamination and assesses the effects of human activities on coastal and estuarine areas around the Nation. It has been analyzing estuarine and coastal sediments and tissue samples from selected organisms for a broad suite of trace metals and organic chemicals. Samples are collected

from a network of sites located around the coastline of the U.S. Tissues are also examined for evidence of biological response to environmental contamination such as liver tumors and reproductive damage.

Since 1986, the NOAA Mussel Watch Project, a major component of the NS&T Program, has been making the same chemical measurements on surface sediments and whole soft-parts of mussels and oysters collected from about 200 coastal and estuarine sites. Recent results from the Mussel Watch Project describe the spatial distribution of coastal contamination and, where temporal trends exist, show contamination to be decreasing in many instances. This finding implies that some benefits have resulted from the management of chemical use and discharge. However, data for more years will be necessary to distinguish the effects of human activity from those of natural influences on some of these chemical concentrations.